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Applicant: GANTNER, *et al.*
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For: Method For Adhering Silicone Gels To Plastics

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

APPEAL BRIEF

In response to the March 30, 2011, final rejection of US Application No. 10/577032, and further to Applicant's Notice of Appeal dated July 7, 2011, Applicant submits this Appeal Brief.

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Real Party in Interest

The real party in interest in this appeal is Dow Corning Corporation, the assignee of the above application.

Related Appeals and Interferences

Appellants are not aware of any related appeals or interferences that will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

Status of Claims

Claims 3-5, 7, and 19-38 are now pending in this application. Claims 1, 2, 6, and 8-18 are canceled. Claims 3-5 and 19-38 were previously presented. Claim 7 is original. Claims 20-24, 26, 28, 30, and 35-38 are allowed. Claims 3-5, 7, 19, 25, 27, 29, and 31-34 are finally rejected in the Office Action dated March 30, 2011 (OFFICE ACTION).

The claims on appeal are all finally rejected claims 3-5, 7, 19, 25, 27, 29, and 31-34.

The appealed claims are listed in the Claims Appendix of this Brief.

Status of Amendments

No amendments have been submitted subsequent to the Final Rejection in the OFFICE ACTION.

Summary of the Claimed Subject Matter

Claim 19 is the only independent claim in the appeal. Claims 3-5, 7, 25, 27, 29, and 31-34 depend directly or indirectly from claim 19.

Claim 19 is concisely summarized below with references to the specification by page and line number:

19. A method for adhering a silicone gel to a substrate comprising:
 - forming a layer of a silicone gel on a releasable substrate;
 - treating a surface of the silicone gel with a primer selected from titanate materials, zirconate materials, Si-H containing siloxanes and platinum materials;
 - applying the treated surface of the silicone gel to a first substrate;
 - removing the releasable substrate from the silicone gel; and
 - applying the silicone gel to a surface of a second substrate to which the silicone gel is to be adhered.

Original claim 19 was a method for adhering a prosthesis to a human or an animal body using a silicone gel. The method, however, can be used to adhere the silicone gel to different substrates (page 2, lines 25-27). So, in a preliminary amendment dated April 11, 2006, claim 19 was amended to a method for adhering a silicone gel to first and second substrates. The steps of the subject matter of claim 19 are described in the specification on page 2, lines 19-24, page 7, lines 26-30, and original claim 19 in respect to the embodiment of adhering the gel to a prosthesis (first substrate) and a human or an animal body (second substrate). Also, the substrate onto which the gel is initially applied in the method can be the releasable substrate (page 6, line 33, to page 7, line 4) and the primer can be selected from titanate materials, zirconate materials, Si-H containing siloxanes and platinum materials (page 5, line 30, to page 6, line 2, and original claims 2, 9, 17).

Grounds of Rejection to be Reviewed on Appeal

1. Whether claims 3-5, 7, 19, 25, 27, 29, 31, and 34 are patentable under 35 U.S.C. §103(a) over European Patent Application No. EP 0 955 347 A2 to Colas, A.R.L. et al. (hereinafter, COLAS), in view of U.S. Patent No. US 6,512,072 B1 to Gantner, D.C. et al. (hereinafter, GANTNER).
2. Whether claims 3-5, 7, 19 and 25 are patentable under 35 U.S.C. §103(a) over COLAS in view of Abstract of Japanese Patent No. 03-106977 to Miyoshi, K., et al. (hereinafter, MIYOSHI).
3. Whether claims 32 and 33 are patentable under 35 U.S.C. §103(a) over COLAS in view of GANTNER and further in view of U.S. Patent No. US 6,475,329 B1 to Johnson C.D., et al. (hereinafter, JOHNSON).

Argument

35 U.S.C. §103(a)

In items 2 and 7 of the OFFICE ACTION, the examiner rejected claims 3-5, 7, 19, 25, 27, 29, 31, and 34 under 35 U.S.C. §103(a) as allegedly being unpatentable over COLAS in view of GANTNER. The examiner alleged COLAS teach some form of the instant forming, applying and removing steps (Abstract and paragraphs 0028, and 0015 of COLAS) and also teach applying at least an adhesion promoter on the surface of a silicone gel (paragraph 0028 of COLAS). The examiner agreed COLAS do not teach what type or how much of the adhesion promoter should be used, but alleged GANTNER teach applying an additive to a film-forming composition where the additive can be a titanate (a catalyst at col. 3, line 56, to col. 4, line 18, of GANTNER) or a siloxane (a diluent at col. 4, lines 19-38, of GANTNER). The examiner agreed that the additive of GANTNER ends up in the film-forming composition, but argued that upon initial application of the additive the examiner argued the surface of the film-forming composition is essentially “treated,” which reads on the claim.

Grouping of Claims

For purposes of rebutting this rejection, Applicants group claims 3-5, 7, 19, 25, 27, 29, 31 and 34 together.

Applicants largely rely here on their arguments made in their Amendment dated February 15, 2011.

Applicants respectfully assert that the Examiner has failed to establish a motivation to combine the teachings of COLAS and GANTNER to arrive at the present invention as claimed. One of ordinary skill in the art would not look to the teachings of GANTNER to overcome the deficiencies of COLAS as the Examiner contends because neither of the prior art references provide an adequate teaching, suggestion or motivation to do so.

One skilled in the art would not choose to modify the method of COLAS to include an additional step treating the surface of the silicone gel with a primer. In addition, the teachings of GANTNER fail to remedy the deficiency of COLAS because GANTNER further does not teach applying a primer to a gel. GANTNER teaches reactants or additives that are in the film-forming composition. These materials are added into the film-forming composition prior to its cure on the substrate. This is clearly different than treating the surface of the gel (or film forming composition) with a primer.

Because GANTNER teaches reactant or additives and not primers, one of ordinary skill would not modify COLAS to incorporate these additives in an effort to arrive at the present invention. Even if one skilled in the art would be motivated to add the reactants or additives of GANTNER into the gel they still would not arrive at the instant invention **where the surface of the gel is treated.**

As previously argued, COLAS does not teach or suggest the use of a primer at all, let alone a specific primer, for adhering a silicone gel to a substrate. The Applicants appreciate that COLAS briefly teaches the use of additives for improving adhesion, but such additives are “**included in the gels**”. Therefore there is no way that such additives could be equated to be used for **treating** the gel. Those skilled in the art readily appreciate that such additives are typically dispersed throughout the gel and are not used as separate components. In addition, COLAS fails to provide even a single example of what type or types of adhesion promoters should be used, how much should be used, etc.

On the other hand GANTNER teaches one-part formulations which rapidly cure on exposure to moisture and are useful in forming films. These formulations contain an alkylene trialkoxy terminated siloxane; a catalyst; a diluent; and optionally an alkoxy silane or a filler. The film forming formulations can also contain an active agent. However the active agent is one that is

bound in the composition and subsequently released at the desired rate. Additionally it should not interfere with curing to the silicone formulation.

The components of the film-forming formulations are mixed together and then applied to the desired site. The formulation then reacts after it is applied to the site. Thus there would be no opportunity to treat it with a primer before applying it to the first substrate. And there is nothing to teach or suggest that the reactants or additives have any effect as a primer would once they are dispersed into the formulation and then undergo a cure reaction.

In addition to their previous remarks, the invention advantageously adds the primer on one side of the silicone gel. This provides a silicone gel that has on the one side improved adhesion to the first substrate and on the other side unimproved adhesion to the second substrate. This benefit is especially valuable when it is desirable to delaminate the silicone gel from the second substrate (e.g., the animal or human body) without delaminating it from the first substrate (e.g., the prosthesis). The advantage is discussed in the specification, e.g., on page 1, at lines 30-34; and page 5, lines 26-29. Also, Tables E and F show silicone gels with better adhesion to one of the substrates than the other one (pages 12 and 13 of the specification). In contrast, improved adhesion on one side of a silicone gel cannot be achieved by a formulation where the additive is **in** the gel, such as in COLAS in view of GANTNER.

Thus to summarize, neither reference teaches or suggest treating the surface of the gel with a primer. COLAS disclose adhering a silicone gel to a substrate. Neither the gel nor the substrate is treated prior to them being combined. GANTNER teaches reactants and additives that are used in producing a film-forming formulation. The film-forming formulation is applied directly to the first substrate and then cured to produce an elastomer or gel. Again, there is no suggestion in GANTNER to treat either the substrate or the gel with a primer. The rejection is not a proper *prima facie* obviousness rejection because a skilled artisan could not have arrived at the

invention from COLAS and GANTNER. Accordingly, claims 3-5, 7, 19, 25, 27, 29, 31 and 34 are patentable over COLAS in view of GANTNER.

35 U.S.C. §103(a)

In item 8 of the OFFICE ACTION, the examiner newly rejected claims 3-5, 7, 19 and 25 under 35 U.S.C. §103(a) as allegedly being unpatentable over COLAS in view of MIYOSHI. The examiner alleged COLAS teach some form of the instant forming, applying and removing steps (Abstract and paragraphs 0028, and 0015 of COLAS) and also teach applying at least an adhesion promoter on the surface of a silicone gel (paragraph 0028 of COLAS). The examiner agreed COLAS do not teach what type or how much of the adhesion promoter should be used. The examiner alleged MIYOSHI teach applying a silicone primer to silicone gel, where the primer is capable of forming a chemical bond to the silicone gel to be bonded to the support surface.

Grouping of Claims

For purposes of rebutting this rejection, Applicants group claims 3-5, 7, 19 and 25 together.

Because the rejection was newly made in the OFFICE ACTION, Applicants think that pursuant to 37 CFR 41.37(c)(1)(vii) they have good cause for the Board to consider their following argument because this is Applicants first opportunity to respond to this rejection.

Applicants disagree with the rejection because the examiner incorrectly determined the scope and content of the prior art and the differences between the prior art and the claimed invention. The instant primer selected from titanate materials, zirconate materials, Si-H containing siloxanes and platinum materials is an element that is missing in COLAS and MIYOSHI. This missing element is a significant technical difference that creates a non-obvious gap between the invention method and the cited prior art method.

The examiner admitted COLAS do not teach treating silicone gel on a sheet with the instant primer. MIYOSHI do not teach any specific silicone primer, but merely state their silicon primer is capable of forming chemical bonds with the uncured gel of MIYOSHI. The organo-hydrogeno-polysiloxane mentioned by the examiner is an ingredient of the uncured MIYOSHI gel, not an example of the MIYOSHI silicone primer. There is no teaching or suggestion in MIYOSHI to choose the instant primer selected from titanate materials, zirconate materials, Si-H containing siloxanes and platinum materials. Thus, the examiner incorrectly determined the scope and content of the prior art and the differences between the prior art and the claimed invention. The rejection is not a proper *prima facie* obviousness rejection because the skilled artisan could not have arrived at the invention from COLAS and MIYOSHI. Accordingly, claims 3-5, 7, 19 and 25 are patentable over COLAS in view of MIYOSHI.

For the record, the examiner alleged MIYOSHI teach applying their silicone primer to the silicone gel, but MIYOSHI actually teach applying their silicone primer to their substrate.

35 U.S.C. §103(a)

In item 9 of the OFFICE ACTION, the examiner newly rejected claims 32 and 33 under 35 U.S.C. §103(a) as allegedly being unpatentable over COLAS in view of GANTNER and further in view of JOHNSON. The examiner alleged COLAS teach some form of the instant forming, applying and removing steps (Abstract and paragraphs 0028, and 0015 of COLAS) and also teach applying at least an adhesion promoter on the surface of a silicone gel (paragraph 0028 of COLAS). The examiner agreed COLAS do not teach what type or how much of the adhesion promoter should be used, but alleged GANTNER teach applying an additive to a film-forming composition where the additive can be a titanate (a catalyst at col. 3, line 56, to col. 4, line 18, of GANTNER) or a siloxane (a diluent at col. 4, lines 19-38, of GANTNER). The examiner agreed that the additive of GANTNER ends up in the film-forming composition, but argued that upon initial application of the additive the examiner argued the surface of the film-forming composition is essentially “treated,” which reads on the claim. The examiner argued JOHNSON

teach the use of tetra-n-butyl titanate and trimethoxymethylsilane as coupling agents (claims 1, 6, 7 and 15 of JOHNSON).

Grouping of Claims

For purposes of rebutting this rejection, Applicants group claims 32 and 33 together.

Because the rejection was newly made in the OFFICE ACTION, Applicants think that pursuant to 37 CFR 41.37(c)(1)(vii) they have good cause for the Board to consider their following argument because this is Applicants first opportunity to respond to this rejection.

Claims 32 and 33 depended directly or indirectly from claim 31, which depends from claim 19. Claim 31 differs from claim 19 in that in claim 31 the silicone gel is cured prior to the treating step, whereas claim 19 does not mention curing. Applicants incorporate their previous argument against the first grounds of rejection here. The rejection is not a proper *prima facie* obviousness rejection because the skilled artisan could not have arrived at the invention from COLAS, GANTNER and JOHNSON. Since from their previous argument claims 19, 31, 32, and 33 (among others) are patentable over COLAS in view of GANTNER, claims 32 and 33 are also patentable over COLAS in view of GANTNER and further in view of JOHNSON.

Based on the above arguments, the appellants respectfully request that the examiner's rejections of claims 3-5, 7, 19, 25, 27, 29, and 31-34 in the present application be reversed and that the claims be allowed.

For the record, Applicants continue to disagree with the examiner's assertion that COLAS teach applying at least an adhesion promoter on the surface of their silicone gel or that GANTNER teach treating the surface of their film-forming composition.

Respectfully Submitted,
Dow Corning Corporation
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/Claude F. Purchase/

Claude F. Purchase

Reg. No. 47,871

Tel: 989-496-3569

Claims Appendix

3. (previously presented) The method according to Claim 19 in which the first substrate is a plastic selected from the group consisting of polyolefins, polyvinyls, polyurethanes and polyurethane-ureas, polyvinyl chloride derivatives, polyacrylic and polyacrylates derivatives, polyacrylonitrile, polyesters, cellulosic films, polyimides, polyamides, epoxy and phenolic plastics, polycarbonates, phenoplasts, epoxy resins, fluorinated polymers, polyoxymethylenes, polyphenylene oxides, polysulfones, polyphenyl sulfide, silicones and polysaccharide based materials.
4. (previously presented) The method according to Claim 19 in which the first substrate is selected from the group consisting of natural macromolecular materials, collagen, wood, cork, leather, metals, glass, ceramics or composite.
5. (previously presented) The method according to Claim 19 in which the layer of silicone gel has a thickness in the range of about 0.1 mm to 5 mm.
7. (original) The method according to Claim 3 in which the plastic is in the form of a prosthesis.
19. (previously presented) A method for adhering a silicone gel to a substrate comprising: forming a layer of a silicone gel on a releasable substrate;

treating a surface of the silicone gel with a primer selected from titanate materials, zirconate materials, Si-H containing siloxanes and platinum materials; applying the treated surface of the silicone gel to a first substrate; removing the releasable substrate from the silicone gel; and applying the silicone gel to a surface of a second substrate to which the silicone gel is to be adhered.

- 25 (previously presented) The method according to Claim 19 wherein the gel has a tack in the range of 50 g to 500 g when measured by a probe tack tester.
27. (previously presented) The method according to Claim 19 wherein the primer is diluted in a diluent selected from volatile silicones, hydrocarbons and alcohols.
29. (previously presented) The method according to Claim 19 wherein the primer is applied by spraying, brushing, coating with a blade, roll transfer coating, wiping or dipping.
31. (previously presented) The method as set forth in Claim 19 wherein the silicone gel is cured prior to the step of treating the surface of the silicone gel with the primer.
32. (previously presented) The method as set forth in Claim 31 wherein the primer comprises tetra-n-butyl titanate (TNBT).

33. (previously presented) The method as set forth in Claim 32 wherein the primer further comprises trimethoxymethylsilane (TMMS).
34. (previously presented) The method as set forth in Claim 27 wherein the diluent is 2-propanol (IPA), hexamethyldisiloxane (HMDS), or a mixture thereof.

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The following appendices are required, even if the only content is 'None'.

Evidence Appendix

None

Related Proceedings Appendix

None